

AMERICAN VETERINARY REVIEW,

DECEMBER, 1884.

ORIGINAL ARTICLES.

INTRODUCTORY ADDRESS

At the Opening of the Veterinary Department, University of Pennsylvania,
October 2nd, 1884,

By RUSH SHIPPEN HUIDEKOPER.

Professor of Internal Pathology and Contagious Diseases (pro tempore of Anatomy), and Dean of the Veterinary Faculty, University of Pennsylvania; Doctor of Medicine, University of Pennsylvania; Veterinary Surgeon, Alfort, France; Major and Surgeon, 1st Brigade, N. G. of Pennsylvania; Fellow of the College of Physicians, Philadelphia; Member of the U. S. Veterinary Medical Association; Ex-Coroner's Physician of Philadelphia, etc., etc.

"Il poco e niun conto in cui é tenuta la Veterinaria presso di noi, é cagione de gravissimi danni, non dico alla scienza ma agli intere i economici di tutto il paese. Onde me parve de non errare, prefiggendomi lo scopo di aiutare i giovani cultori la Veterinaria a comprendere l'importanza della loro scienza, ed a presentare i luminosi destini a cui é chiamata nell'avvenire."—ERCOLANI.

Mr. Provost and Gentlemen:

I have to-day the honor to deliver the first address of this new Department of the University of Pennsylvania for the instruction of Veterinary Medicine. I feel that I have a right to the pleasure and pride I take in the position you have awarded me, as a Pennsylvanian, an alumnus of this university, and as a member of the family of the founder of its Medical Department, which for one hundred and nineteen years has stood at the head of medical teaching in the United States; but I am awed by the

responsibility which it places upon me. At the founding of the Medical Department the country was new, any advance given to the people for their education was a boon, which they welcomed no matter how small it was. The physician and surgeon were so needed, that they rose rapidly to a position which was socially better than it had been in the mother-country; every addition to the ranks of medicine was regarded as a public benefaction, for life is always man's greatest care.

In founding a veterinary school we have much to labor against. While a few people fortunately look upon the philanthropic side of veterinary medicine, the majority only employ a veterinary surgeon as a means of saving or of utilizing so many dollars and cents in the form of a domestic animal. Popular prejudice has classed the "horse doctor" and the "cow leech" with the most ignorant farrier, and has tainted him with the reputation for dishonesty of the proverbial horse dealer; medical men have classed him the least educated empiric of their own cast, and, with the exception of a few individuals, no one has thought for a moment that the responsibility of the average ignorance was upon himself and his government. Happily there are always men enterprising beyond their fellows, and throughout the country are many practitioners who have had the diligence to labor and the intelligence to appreciate what their experience has shown them; the want of journals and the small demand for and high price of veterinary books, except of the "Universal Stock Book and Veterinary Compendium" order, has prevented these men from being known outside their own locality. Medical publishers hesitate to print the work of a veterinary surgeon unless it is of exceptionable merit, and books of technical worth are only bought by the few physicians whose personal tastes interest them in animals, as a pastime or for laboratory research; books which are within the scope of the layman's understanding are of little accuracy and value, and are apt to condemn the author in the eyes of the scientific man.

In establishing an institution for the advancement of veterinary knowledge, and in asking intelligent and reputable men to select it for a profession whereby they may gain a reputation and

livelih
has att
luctan
devote
bor, th
a lame
himsel
milk f
nature
dation
future,
medici

Ve
inarian
veterin
"Vehet
of bur
howeve
origin,
"teeren
this sa
South
North
and ani

Vet
physiol
lationsh
of bree
greatest
product
tate a
used as

The
contem
in myth
derived
describ

livelihood, we have to contend with the prejudice which ignorance has attached to veterinary surgeons as a class, and with the reluctance which the aspirants for this title feel, in offering to devote a long period of hard work to gain that which their neighbor, the farrier, acquired the day he opened a suppurating corn in a lame horse and sent it home sound, or the cow-leech took to himself when he gave some chance herb to a cow down with the milk fever and she recovered, as they sometimes do by the aid of nature. Before entering upon the causes which led to the foundation of this department of the university and its aims for the future, I will give a short review of the development of veterinary medicine in other countries and in our own.

Veterinary medicine derives its name from the Latin "veterinarium," "veterinaria," veterinary medicine, "veterinarius" a veterinary surgeon, these terms coming from the "Veterinæ" or "Veheterinæ," the general term used by the Romans for beasts of burden or pack animals, from "vehere" to carry. Lenglet, however, claims that the term is of much older and of Celtic origin, being derived from "vee" or "vieh" cattle, and the verb "teeren" to be sick. Nearly all languages employ words from this same root; French "veterinaire," Italian "veterinaria," South Germany, Hungarian and Russian "veterinär," but in North Germany "thierarzt" and "thier-medizin" (animal doctor and animal medicine) are more generally used.

Veterinary medicine comprises not only the study of anatomy, physiology, chemistry, materia medica and diseases in their relationship to animals, but includes with equal importance the laws of breeding animals and of raising and training them to be of greatest service to man, whether as motors or as machines for the production of milk, food and clothing; these uses in turn necessitate a knowledge of farriery and the inspection of meat when used as food.

The earliest references to the diseases of animals are found contemporaneously with the first medical writings. *Æsculapius* in mythological history includes a knowledge of horses, which he derived from Chiron, the Centaur. Hippocrates (460-377 B. C.) described the symptoms of diseases and the remedies to be used

in animals. Zend Avesta, the Arab, and Charaka, the Hindoo, mention several of their maladies. Ebers shows that dissection was carried on during the earliest Egyptian dynasties, and probably much more frequently in animals than in man, on account of the rigid religious rules in regard to the dead. The Egyptians had as many specialties as a medical school of to-day, and distinct mention is made of doctors for fowls. Numerous references are made in the Bible to diseases of animals and to herbs used in curing their troubles, and in the Mosaic laws we have clear orders for the inspection of meat and the division of animals into the pure and impure. Diocles (360 B. C.) derived most of his knowledge of anatomy from animals, and Xenophon (445 B. C.) in his treatise on cavalry describes some of the ailments of horses and especially speaks of founder. Aristotle (384-322 B. C.) wrote a work of some size on animal medicine which has been translated with great care by Doctors Aubert and Wimmer. Pamphylus of Alexandria (200 B. C.) Florentius, and Magon of Carthage at about the same date wrote works which were complete for the time; the latter was translated by Dionysius of Utica.

In early times the practice of animal medicine was almost exclusively confined to the shepherds and farriers, who rarely raised themselves above the common ignorance of the day. The surgical operations were limited to castration of the male of all species, and to the castration of female swine, which was also done by the earliest nomad races, and at the beginning of the Christian Era was a well known operation in Italy and Gaul. In the prime of the Grecian rule of the world, we find accounts of doctors for horses, who had, however, but a summary knowledge of diseases and blemishes, but who kept in accord with the spirit of the age in proposing great numbers and varieties of curative medicines. The writings of these men, composed almost entirely of letters, were collected in the 10th century by order of the Greek Emperor, Constantine Porphyrogennetors, and were printed in the 16th century in both Greek and Latin text. The Roman Emperors employed veterinary surgeons in their armies and the Emperor Augustus ordered the erection of hospitals for sick animals, styled "Veterinarium," in contradistinction to the "vale-

tudina
agricu
swine,
149 B
(40 B.
the st
greate
used i
seven
animal
of the
20 ye
young
of the
from g
tetanus
and he
latter
lected
piled a
centuri
subject
A.D.)
as now
as a gif
them to
and the
neighb
Dur
were, w
devote
motion
Ruffus
in whic
credit.
of value
perverte

udinarium" or hospital for sick soldiers. The Roman writers on agriculture described numerous diseases of sheep, goats and swine, but their works are only of historical interest. Cato (234-149 B. C.), Varro (116 B. C.), in his "De re rustica" and Celsus (40 B. C.) are full of the superstitions of the age and ascribe to the stars, to the moon and the various natural phenomena the greatest influence on diseases of animals and the remedies to be used in healing them. Columella (40 A. D.) in volumes six and seven of his twelve volume "De re rustica," treats extensively of animals; he recommends bleeding, describes castration and the use of the hot iron, and splints for fracture. Pedanius Dioscoridius, 20 years latter, gives an account of hydrophobia. Pliny, the younger, and Galen speak of the scab in sheep. In the middle of the 4th century Apsyrus established the diagnosis of strangles from glanders, gave a description of moon blindness, founder, tetanus, cough, tuberculosis and several of the contagious diseases, and he proposed curative means of extreme common sense. At latter end of the same century Vegetius Renatus, a Latin, collected most of the known writings of his predecessors and compiled a work of veterinary medicine. From the 7th to the 13th centuries we find scarcely a trace of literature on veterinary subjects, except from the pens of Abu Bekr, Avicenna (980-1037 A.D.) and Ibn el Beilhar (1248 A.D.), all of them Arabs. Then as now among the Arabs the art of healing a horse was regarded as a gift of God, belonging to special families and transmitted by them to their descendants. To offer them pay would be an insult, and their only reward is the most profuse hospitality from their neighbors.

During the early days of the Middle Ages the rulers of states were, with a few exceptions, too much occupied with wars to devote any thought to the advancement of science or to the promotion of agriculture. Under Frederick II, however, Jordanus Ruffus (1194 to 1250 A. D.) wrote a book of considerable value, in which spavin is described, among other blemishes, with great credit. In 1270, Theodoric, Bishop of Servia, also wrote a book of value. The superstition of the Greek and Roman days, which perverted the symptoms of diseases and rendered all study of a

rational nature futile, was in the Middle Ages replaced by a superstition more deleterious still to the advancement of any knowledge of animal diseases. The epidemics of the contagious diseases were considered a visitation and punishment of God, and it was thought improper to treat such sick beasts or to dissect their dead bodies. During the 15th century a school of cavalry was established in Naples and from it developed men with considerable veterinary attainments. Carraccioli, Grisone and others have left us books in quantity.

The 16th century is the real commencement of a practical Veterinary Era. At this time the wars of Europe were at perfection, the warriors had learned to protect their horses with heavy armor and required good horses to carry it, the gentler amusement of tournaments was indulged in alike by warriors and the secular and ecclesiastical princes and nobles, and required horses of spirit and speed to satisfy their ambition; hawking, other sports and the advancing refinement of civilization which brought ladies, priests, scientific men and the artist followers into the amusements and travels of the courts, demanded palfreys and hinnies for their use. All this led to the breeding of better animals and produced numerous writers concerning the raising and care of the horse, his diseases and blemishes, the mode of curing them and equitation. The breeds of horses at this period in Italy had attained such a reputation that popes, cardinals, princes and all the greater nobles had their special brands and marks, and most of the books contained cuts of them, with a description of the peculiar merits of the animals.

In 1590 the Senator Carlo Ruini of Bologna, a celebrated teacher of medicine in several of the North Italian universities and one of the discoverers of the circulation of the blood, published a large and valuable work in folio on the anatomy and blemishes of the horse. He founded in the university at Bologna the first and to-day the greatest veterinary museum in the world. In the 17th and 18th centuries horses had acquired a relatively high value and the numerous works which appeared on Hippology contained additional chapters on the diseases of animals. Some attention was at this, the so called "Stable-master's period," paid

to dog
and off
selves
rinderp
ments
search
nicious
cessity
the stu
authori
definite

In
lover o
knowle
labor a
his own
erinary
qualific
course
horse.
great;
to it, bu
learn th
been the
of the
Paris to
the site
to cattl
school, r
unfortun
and Bou
plished.
England
example
and was
Teutonic
tions wer

to dogs, hawks and other sporting animals; officers of the army and officials of the breeding studs were obliged to apply themselves to the cure of their ailments. In the 18th century the rinderpest ravaged over the most of Europe, princes and governments commissioned the celebrities in medicine of the day to search for a remedy for the treatment or prevention of this pernicious disease. Several of the governments recognized the necessity for institutions for veterinary studies, but the jealousies of the stud masters on one hand and the military and epidemic police authorities on the other, prevented the accomplishment of any definite plan.

In 1762 Claude Bourgelet, a French advocate, who was a lover of horses, and as an amateur had attained considerable knowledge of animals and of medicine, placed the fruits of his labor and his extraordinary intellect to use. He founded from his own resources, which were limited, a school for teaching veterinary medicine, at Lyons, in the centre of France; the only qualification demanded from scholars was a good character; the course extended over one year and treated principally of the horse. The success and fame of this school was immediate and great; not only were a large number of French scholars attracted to it, but most of the neighboring governments sent students to learn the merits of it. The French government, which has always been the foster mother of science, now assumed the responsibility of the institution, enlarged it, and in 1765 called Bourgelet to Paris to establish a second school. This was placed at Alfort on the site of the Royal Menagerie, and special attention was paid to cattle and sheep. There was at this time in Paris a private school, rich in the teaching of Lafosse the younger, but from unfortunate personal and political differences between Lafosse and Bourgelet no fusion of their teaching could ever be accomplished. While Austria, Prussia and the greater German States, England, Denmark and Italy resolved at once to profit by the example of France, the realization of their plans differed greatly and was not everywhere immediately completed. Italy and the Teutonic races were the first to follow with success; their institutions were started under two distinct plans, one the founding of a

complete veterinary faculty, the other the addition of a single veterinary chair to the existing universities. The university plan suffered from being unable to furnish sufficient clinical material; enough instruction in anatomy and the teaching was allied too closely to that of human medicine, too little practical instruction was given in the elementary parts of proper veterinary training and in the study of animal epidemics. The co-education of veterinary and medical students was strongly urged in a memoir of Cothenius, the body physician of Frederick the Great; he also argued that medical students should have a knowledge of animal epidemics so that they might afterwards officiate as veterinary inspectors. The first veterinary school to follow those in France was in Turin in Piedmont, under Charles Emmanuel III, King of Sardinia, 1769; that at Copenhagen, Denmark, was founded in 1773 with Abildgaard in charge.

In Vienna, Austria, an advanced farrier's school, where a few operations were performed, existed from 1767 to 1777. Vienna had long been renowned for its guild of farriers, of whom a monument stands to-day in the Graben, in the form of a tree stump converted into a column of iron by the horse shoe nails which each smith drove into it on becoming a member of the guild. In 1764 the Empress Maria Theresa sent a soldier named Scotti, an apothecary named Mengman, and a certain Haller to Lyons for two years, who upon their return gave a limited course of instruction with success. In 1769 the Empress sent a surgeon named Wolstein, accompanied by a smith, to Alfort, where they remained two years taking advantage also of Lafosse's clinic in Paris; they then travelled through England, Holland, Denmark and Germany and returned in 1775, having spent six years in preparing themselves for their work. This complete training entitled Wolstein to the consideration he received in the hands of the Emperor, who granted him his demands for a course of two years, embracing anatomy, exterior anatomy, diatetics, breeding, shoeing, practice of medicine, materia medica, botany and chemistry, also a stable for 30 horses, 6 to 8 cows and swine and 15 to 20 smaller animals. The result of this foundation has always been one of the most methodical schools of Europe. The teachers for other schools were

mostly
their g
ntions
Milan,
1793,
Berne,
1821, l
Lisbon
Consta

In
founde
at the
who be
but has
by scho
Society
institut
years i
lived, th
tific tr
founde
renown
vigor.
has just
have ea
Naples
institut
Bologna
Perugia
ment of

In C
have di
always
Putz is
tific wor
great cli
well kno

mostly recruited from surgeons and smiths who were sent by their governments to the French schools, and a number of institutions were rapidly founded in Hanover, 1778, Dresden, 1780, Milan, 1787, Berlin and Munich, 1790, London, 1791, Madrid, 1793, Gressen, 1798, Petersburg, Russia, 1808, Naples, 1815, Berne, 1816. Zurich, 1819, Skara in Sweden, Stuttgart and Utrecht, 1821, Edinburgh and Toulouse, 1825, Alexandria in Egypt and Lisbon, 1830, Cureghem, near Brussels, 1832, Warsaw, 1840, Constantinople, 1842, and others.

In England the Royal College of Veterinary Surgeons was founded in 1791 by a number of noblemen and rich cattle owners, at the instigation of a French veterinarian, Vial de Saint Bel, who became the first director. It never received government aid, but has been supported by subscriptions of members of the society, by scholars' fees, by an annual subscription from the Agricultural Society and by the board of the animals in its hospital. Two institutions of a similar nature have been undertaken in recent years in London, by Ainslie and Gamgee; but they were short lived, though the latter did much to awaken an interest in scientific training. The Dick College in Edinburgh, Scotland, founded in 1825, has furnished many teachers and practitioners of renown, and by recent rich bequests promises to take on renewed vigor. The New School in Edinburgh, under Prof. Williams, has just been re-established in fine buildings. Dublin and Glasgow have each a school. In Italy the schools of Turin, Milan and Naples draw the largest number of students, while there are also institutions rich in their museums, libraries and laboratories, at Bologna, Pisa, Parma and Modena, with secondary schools at Perugia and several smaller towns. The teachers are all government officers.

In Germany many of the veterinary chairs in the universities have disappeared, or are little known, but that of Giessen has always held a well deserved reputation, and in Halle Professor Putz is making a name for his chair through his valuable scientific work on the contagious diseases. The Berlin school is the great clinical school of Germany, while Dresden and Munich are well known for their work in anatomy and laboratory research.

In addition to the schools of Warsaw and Petersburg, in Russia, others have been founded in Cracow, Dorpat, in Livonia and in the Kassin; these schools are attached to the medical and surgical faculties and require five years study. The course is most thorough and from each graduating class are selected, by competitive examination, two students, who under pay and at the expense of the government, are sent to the other schools of Europe to perfect themselves in special branches; on their return they pass an examination, which, if satisfactory, attaches them to the faculty, which they enter when a vacancy occurs. The professional and military standing of veterinary surgeons in Russia is probably the highest rank attained in any country. In Italy the graduates rank as doctors, and the diploma is a university *degré*. In Austria the faculty must possess both the veterinary diploma and that of doctor of medicine. In France and Germany the faculties are recruited from among veterinary surgeons, but while the military veterinary surgeons enter as officers in France, they only attain that grade in Germany on becoming senior veterinary surgeon of a regiment, but it must be remembered that military surgeons in Prussia were non-commissioned officers in 1840. In Holland the faculty was composed entirely of medical men until 1851, when veterinary surgeons were admitted as teachers. In England the position of a veterinary surgeon has much improved in recent years; while the military veterinarian became an officer in the early part of the century, the position of the practitioner kept steadily in the background of the medical man, who in turn remained an apothecary until the medical profession was entered by men with titles to their names. It has been mainly due to the efforts of Mr. Fleming, the Chief of the Veterinary Department of the army, that a great improvement has taken place in the profession, and the last ostracism was removed in June, 1883, when he obtained for the military veterinary surgeon the *entree* to Court.

The course of study in the European schools, while every where thorough, varies considerably in its details. It is shortest in England, where three partial years only are demanded. These are devoted essentially to making practitioners, and during the long

vacat
For m
to the
cattle
are be
medic
establ
there
too m
the st
nume
Willia
Germa
but ar
Receiv
oldest
liche
Hunga
course
laborat
has jus
for the
School
commo
half y
years i
is *par*
mals ca
clinics
schools
practic
the eye
now pu
Wh
well kn
very rec
men to

vacations the students are supposed to be serving with preceptors. For many years English instruction was too exclusively devoted to the horse, but recently much more attention has been paid to cattle and other animals, and laboratories for practical teaching are being added, which promise a greater amount of scientific medical education. The *Veterinarian*, a monthly journal, was established in 1828, and has continued uninterruptedly since; there are many veterinary books in English, but unfortunately too many of them are of a routine character, and better suited to the stable man than to the medical man. There are, however, numerous exceptions, and the names of Bracy Clark, Percivall, Williams, Fleming and others will always be honored. French, German and Italian books are comparatively limited in numbers, but are of scientific value. The oldest of veterinary journals, the *Receuil de Médecine Vétérinaire*, was established in 1824, and the oldest German journal, the *Vierteljahrsschrift für Wissenschaftliche Veterinärkunde*, in Vienna in 1851. The Austrian and Hungarian Institution teach for three years with a two years course for higher grade farriers. In these there is much more laboratory work. The magnificent new institution at Buda-Pesth has just been built on ample ground, and fitted with every facility for theoretical and practical work. At its side the Agricultural School is in course of construction, and many of the chairs will be common to both. The German schools teach for three and a half years, while the Belgian, Italian and French cover four years in their course of study. The school at Alfort, near Paris, is *par excellence* the greatest clinical school, where a hundred animals can be seen each day. Berlin, Lyons, Vienna have large clinics and do more laboratory work. The Toulouse and Swiss schools, with that at Utrecht, have the greatest reputation for cattle practice, and at Munich special attention is given to diseases of the eye in the lower animals, and for this branch a journal is now published.

While there have often been individual veterinary surgeons well known outside of their own profession, it has been within very recent years that we can count with pride enough scientific men to show a marked elevation in the standing of our colleagues.

But recently we have lost Ercolani of Bologna, who was known throughout the scientific world for his researches in comparative anatomy, histology of the organs and animal parasites; greater perhaps to an Italian was his reputation as a patriot and statesman in aiding the consolidation of Italy. Gurlt also was a veterinary teacher; Thiernesse, the late Director of the Cureghem School, was Secretary of the Academy of Medicine, in Brussels; Bouley, to-day Vice-President of the Académie des Sciences in Paris and professor at the side of Milne-Edwards in the Museum, was the greatest veterinary clinician ever known. Chauveau, the anatomist and physiologist, is Director of the Veterinary School in Lyons, and professor in the Medical Faculty, in which positions he preferred to remain when he refused the chair of Claude Bernard; Bollinger, Siedemgrotzky, Heusinger, Goubaux and others, whose names are well known in scientific journals, are veterinary surgeons. In the staff of assistants who accompanied Pasteur to Egypt to study the cholera was Nocard, a veterinary teacher in Alfort.

While preparing myself for my position here I had the opportunity of visiting many of the schools of which I have just spoken, and working in several of them, and I beg to be allowed this occasion to publicly testify my thanks and gratitude for the almost universal courtesy, politeness and aid which I received. It was first shown me as your representative, although in many cases it developed into warm personal friendships, and you will allow me to especially mention M. Bouley, M. Goubaux and the Faculty of Alfort, M. Chauveau, and the Faculty of Lyons, M. Marey, the Faculty of the Vienna school, Professors Dieckhoff at Berlin, and Leisering at Dresden, Lanzillotti Buonsanti at Milan and Mr. Fleming and Professor Williams in England and Scotland. To the memory of Ercolani I can only add the feeling of reverence which everyone had who knew him personally.

In America the advance in veterinary medicine has been far from keeping pace with our national reputation for energy and self-preservation.

In 1806 Dr. Benjamin Rush, of this University, who had just

been
a few
Philad
Depar
tural
the S
mestic
since
000,00
000,00
838,11
732,39
&c., 2
value,
hogs, 4
animal
perhap
who h
practic
of New
thirteen
of prop
Val
here un
value o
of anim
course
ber of
for bree
to the l
for food
traumat
portion.
furnishi
army th
officers,
ders the

been in Europe, and had seen the success of the institutions then a few decades old, wrote a letter to the Agricultural Society of Philadelphia, and urged the importance of adding a Veterinary Department to the University. He called attention to the agricultural prospects of the country, and his letter was discussed before the Society in 1807, but nothing practical was done. Our domestic animals have steadily increased in number and in value since that time. We had in 1852, horses, 5,000,000; cattle, 17,000,000; sheep, 22,000,000; swine, 30,000,000; value, \$600,000,000; and to-day we have in the United States, horses, 10,838,111; value, \$765,041,308; mules, 1,871,079; value, \$148,732,390; milch cows, 13,125,685; value, \$396,575,405; oxen, &c., 28,046,477; value, \$611,549,109. Total cattle, 41,171,762; value, \$1,009,114,514; sheep, 49,237,291; value, \$124,365,835; hogs, 43,270,086; value, \$291,951,221—a total of 176,488,329 animals, representing a value of \$2,338,215,268; and there are, perhaps, in the United States only some 500 veterinary surgeons who hold certificates showing that they are properly qualified to practice. An importation of the Russian rinderpest into the port of New York would probably be followed by the destruction of thirteen millions of cattle, or three hundred million dollars' worth of property in twelve months.

Valuable breeds of animals have been imported and developed here until individual horses, cows and sheep reach the enormous value of thousands of dollars. With the increase in the number of animals the ordinary accidental and sporadic diseases have of course increased in the same ratio, but with the augmented number of valuable animals wanted here and there over the country for breeding purposes, with the increased number of horses sent to the large cities for motors, and the thousands of cattle shipped for food in dirty, non-disinfected cars and boats, the increase of traumatic and contagious diseases have been in much greater proportion. Our Government has not done the first thing toward furnishing men capable of combating these scourges; even in the army the handful of veterinary surgeons are not recognized as officers, and have so little authority that on an outbreak of glanders they have not the power to condemn or sequester an animal

if the Colonel thinks it has the disease in what his ignorance calls a non-contagious stage. The still smaller number of officers appointed by the Treasury Department to establish quarantine in order to protect us from imported diseases has been composed of competent men, but too few in number, and without sufficient means and law at their disposal to take proper precautions. The contagious diseases are left for the States to cope with alone, each protecting itself as it sees fit, regardless of its neighbors.

The first veterinary record made in the United States was made in Philadelphia, 1818, when we find in the registry of the Clerk of the Eastern District that, "James Carver hath deposited in this office the title of a book the right whereof he claims as author, in the words following: 'The Farriers' Magazine; or, Archives of Veterinary Science,' containing the anatomy, physiology and pathology of the horse and other domestic animals." Nine years later John Rose, a Prussian graduate, settled in New York, about the same year the well known Mr. Michener began practice in Pennsylvania. In 1851 a Mr. G. H. Dadd, a self-named veterinary surgeon, started a veterinary journal in Boston which lived but a year, to be revived again in 1855 as the *American Veterinary Journal*, and the same year Mr. Dadd and several associates formed the first veterinary school in the country which, however, soon disappeared. The New York College of Veterinary Surgeons was chartered in 1857, and up to 1875 led a feeble existence, during which time it issued some eighteen diplomas. The Pennsylvania College, chartered in 1866, has continued its organization, but without a regular course of instruction. Two years later the Illinois Industrial University and Cornell added Dr. Prentice and Professor James Law to their faculties and have given regular lectures. They were followed by Amherst (1869), the Ohio Agricultural College (1870), and Ames, Iowa. In 1875 the American Veterinary College was formed in New York from the New York College of Veterinary Surgeons, with Professor Liantard, a French graduate, at its head. This school has steadily increased in value and number of students. It was the first med-

ical s
exam
of wh
in To
years
by M
school
These
with t
that
mande
little
amoun
their v
—less
cobble
to be t
versity
hospita
thorou
fessor
in New
merit.
formed
throug
New Y
ing was
with th
medical
tions to
to advan
"W
the mos
man me
cultural
"Res
Medical

ical school in the State of New York to require a matriculation examination. It has issued diplomas to 133 of its students, many of whom are in Pennsylvania. In 1862 a school was established in Toronto which, like the New York school, demands but two years' study. The Montreal school, founded in 1866, and directed by Mr. MacEachran, requires three winters. Recently a new school has been established in Chicago, and one in Minneapolis. These schools are dependent on scholars' fees for support, and with the precedents of the medical schools of the country, find that two winters are all that can, with pecuniary profit, be demanded for forcing into the heads of young men, often with but little previous education, the elements of medicine with its vast amount of practical details, and the long row of diseases with their variations in half a dozen widely differing species of animals—less time than it takes for a shoemaker's apprentice to learn to cobble shoes, a clerk to become a book-keeper, or a farrier's boy to be trusted to put ordinary shoes on a horse. Harvard University established a veterinary department last year and has a hospital of some size. It requires three years' study and gives a thorough course of instruction. The school is in charge of Professor Lyman. The *American Veterinary Review* published in New York since 1877, has continued a journal of scientific merit. The United States Veterinary Medical Association, formed in 1863, is composed of the leading veterinary surgeons throughout the country and has held semiannual meetings at New York and Boston until the present autumn, when the meeting was held in Cincinnati. In 1870 the late Dr. S. D. Gross, with the keen appreciation and ready heart for the demands of medical education, framed and presented the following resolutions to the American Medical Association, but his noble attempt to advance our profession failed—was lost by a large majority.

"Whereas, We regard the cultivation of veterinary science of the most vital importance, not only to the advancement of human medicine, but also for reasons of political economy and agricultural interest,

"Resolved, First.—That we recommend the State and County Medical Societies to use their influence in the establishment and

support of veterinary schools in their respective States. Second.—That they ask the Governors of their respective States to recommend in their messages to thier Legislatures the importance of establishing veterinary colleges, and that appropriations be made to support them. Third.—That they recommend the Governor and the State Legislature when organizing Boards of Health to appoint one or more thoroughly educated veterinary surgeons to be associated as commissioners with other medical officers.

“*Resolved*, That we recommend the employment of veterinary surgeons in the army, and one in the Agricultural Department, with rank and pay of other medical officers.”

Our Veterinary Department has been contemplated for some time, and was rendered practicable through the acquisition by the university of this piece of land from the city of Philadelphia, and the liberality of Mr. J. B. Lippincott and Mr. Joseph E. Gillingham, who have furnished the means for these substantial buildings and outfit. Unfortunately a veterinary school cannot be ordered and completed like a primary school house, and we have but the corner stone of what I believe will be a great institution.

We open to-day with the veterinary course of the first year only; our matriculants, twenty in number, have been required to show a sufficient previous education or have passed a preliminary examination equivalent to that of the Medical Department. This requirement is too little for men who should be qualified to undertake the mathematics needed in a problem of chemical analysis, electricity, or the value of a muscular movement in the physiological study of an animal, or to handle easily the technical terms derived from Greek and Latin, which medicine has found it proper to employ for nomenclature, but it is sufficient to guarantee that the student has enough education to appreciate what will be taught him, with great diligence and labor on his own part.

Our students will learn this year, on the same footing as those of the medical department, the study of chemistry with its practical courses under Professor Wormley; they will follow the course of *materia medica* and pharmacy under Dr. Miller and

Dr.
spec
will
Alle
it is
ther
will
the c
unde
medi
gene
for
cours
velop
helm
brace
and i
be us
smith
foot.
Engli
geon
taking
shoein
horse,
possib
In
taugh
botan
comm
stratic
will co
year w
pathol
These
dition
breedin

Dr. Alexander Glass, V.S., in order to familiarize them with the specialties required in compounding veterinary medicines; they will have the full course of physiology from Professor Allen, and where this is inadequate for veterinary instruction, as it is necessarily prepared for the students of human medicine, there will be supplementary lectures by Professor Smith, who will also direct them in practical work with special reference to the domestic animals; the elementary course in general pathology under Professor Tyson will be the same for the veterinary and medical student. Professor Rothrock will not only give them general botany, but will pay special attention to the plants used for forage and their nutrient value. Professor Parker in his course of zoology, after giving them the general laws of the development and classification of animals, will dwell upon the helminths and animal parasites; the course of anatomy will embrace the horse, cow, sheep, goat, hog, dogs, cats and poultry, and in the course of histology, the tissues of these animals will be used; from the microscope the student will go to the blacksmith shop, where he will learn to forge and to shoe the horse's foot. This last course has never been practically carried out in the English speaking schools, but is essential to the veterinary surgeon; he will never be a farrier and in practice will avoid even taking off a shoe when he can get anyone else to do it for him, but shoeing is the cause of nine-tenths of the surgical evils in the horse, and without a thorough practical knowledge of it, it is impossible to obtain from or show to a blacksmith what one wants.

In the second year, medical or organic chemistry will be taught and examinations will be held; the course of physiology, botany, zoology and anatomy will be finished; the students will commence their lectures in therapeutics, with practical demonstrations of the effects of drugs on the domestic animals; they will continue the course of general pathology; with the second year will commence the lectures on surgical pathology, internal pathology and the contagious diseases or practice of medicine. These same lectures will be continued the third year with the addition of lectures on obstetrics and zootechnics, or the laws of breeding and raising animals, and the modes employed for obtain-

ing the greatest use from them, as they may be destined for animal motors or machines for the production of milk, wool or flesh. A course will be given on the preparation of butcher meat, showing the most humane methods for slaughtering animals for food, the preparation of the meat and the signs of unhealthy or diseased flesh in the living or dressed animal; there will also be lectures on sanitary police familiarizing students with the inadequate laws of this country and those of other countries which they may use as models when called upon to consult in these matters. With the commencement of the second year the student will enter the hospital and during it and the following year will have direct charge of the sick animals; they will keep the clinical records, administer the medicines, perform minor operations, and in case of death make the autopsies. Each in turn will serve in the hospital pharmacy, and prepare all medicines required in the institution.

Such, gentlemen, is the plan of study which we have laid out for making veterinary surgeons. This training thoroughly carried out will give us men fully capable of being the scientific peers of any doctor of medicine; it will form men completely fitted for any trust in an animal epidemic or in the minor details of a routine practice. A man with this education will hold his head up among his fellows, and when a stableman calls for the "horse doctor" will feel that he is called out as a respected professional man to do good, and that he is beyond the suspicion of being asked to use his knowledge to share in a deception or a fraud.

For the instruction of the first year we are as fully equipped as a school can be at its beginning, with but a small museum and the rough edges of the various parts of this educational machine still unworn.

For the second and third years we are not yet prepared, and we depend upon your generosity and that of your neighbors to complete this department. We have here such a piece of ground as is unobtainable in any other large city in the United States, and if we take advantage of it before it is appropriated to other needs we will have an establishment equal to any in Europe. We

need
built
pital
supp
to tre
fund
disea
ble,
surge
the fe
which
for P
In m
there
beast
of suc
of t
and
Such
anima
can
bread
need
self-su
the stu
practic
rant.
away
is thei
give p
sential
Yale o
though
the par
in the
associa
versity

need stables for at least fifty sick horses at once, which should be built with the prospect of enlarging in the future. In this hospital we will take sick animals to board, and it in part will be self-supporting, but there will be many animals with diseases tedious to treat, which will be abandoned by their owners, and we need a fund for the support of such cases. There are many cases of disease among the horses of poor carters, which are readily curable, but the owner cannot afford the fees of a veterinary surgeon, nor the expense of an animal standing idle and eating the food which its work should be paying for; these are the cases which furnish many of the examples of misery that the Society for Prevention of Cruelty to Animals is called upon to alleviate. In many cases the driver is not naturally brutal, but at home there are wife and children to be supported, and the suffering beast is the best he can afford. We need a fund for the support of such animals, which will be judiciously sent us by the agents of the Society for Prevention of Cruelty to Animals, and by the practicing veterinary surgeons of the town. Such a fund will be a double charity—the suffering animal will be relieved, and the knowledge that it can be done without depriving a poor owner of his daily bread will induce the latter to be more charitable himself. We need a cattle dairy of at least fifty cows. This should be largely self-supporting after once established; it will enable us to teach the student practical obstetrics and many of the details of cattle practice of which the usual veterinary graduate is absolutely ignorant. We need dormitories for the students, where those from away can be comfortably lodged, and learn that their alma mater is their home for the time. For our veterinary students who are to give personal supervision to the animals in the hospital, it is essential; for the entire University, it is a necessity. Harvard, Yale or Princeton alumni meet each other like Free Masons and though otherwise strangers, they become rapidly intimate over the past, present and future of their college, because they roomed in the same building, messed at the same table, and had the same associations; this feeling is absent in the alumni of the University of Pennsylvania, except, perhaps, among the medical

graduates, who had their small cliques in their boarding houses. Dormitories will do much to make the university popular, they will tie the graduate's memories to his student life and induce him to take an interest in the future of the institution. We need a botanical garden, and with ample frontage for all our buildings on the sides of this triangle, a beautiful spot is left in the centre for its construction; there exists already a small fund for this purpose left by the late Dr. George B. Wood. We need endowments for the chairs. The chair of surgery must be filled before the next year, and we should be untrammelled in our choice and be able to select the best talent without being influenced by the pecuniary value of so many students.

In fino, gentlemen, we need, and I am sure we will have, your support for this undertaking.

NEW DISCOVERIES IN CERTAIN CONTAGIOUS DISEASES, TUBERCULOSIS, ANTHRAX, RABIES.

BY PROF. A. LIAUTARD, M.D., V.S.

(A Paper presented at the Annual Meeting of the United States Veterinary Medical Association.)

Mr. President and Gentlemen:—Science, it may safely be affirmed, has, obviously, no exclusive nationality. Her genius is thoroughly cosmopolitan, and though different countries may partially appropriate the fame of their native scientists, and these again may distinguish themselves in special and select fields of exploration, yet, whatever may be the discoveries achieved, they must eventually become the property of the entire scientific community. They become the common possession of the intelligent, beyond the limitations of copyright or the restrictions of the patent.

It is for this reason that I have chosen for the subject of the present paper, those important discoveries which, within a comparatively recent period of time, have rewarded the labors of the investigating scientists of Europe, and that I present myself before you to ask your kind attention to a brief consideration of

certain
duties
medicin

The
plausib
growth,
hygien
become
experim
as teste
importa
losis, an
of Koch
their tr
positive
our own

Allo
which co

My f
sidious a
human l
able prop
been wri
inating c
strated b
veau, Ko
stood as
of Koch
discovery
scribed "
field of t
he forme
of virulen
themselve
in varying

At a l
observatio

certain new facts bearing an intimate relation to the practical duties of our own profession, through the questions of sanitary medicine which they involve.

The days of guess-work and unsustained, though more or less plausible hypothesis, are gone by. The theories of spontaneous growth, of the climateric influences, and the old errors of hygiene, have vanished in the presence of the truths which have become the offspring and reward of close observation and rigid experiment; of microscopic research, and of practical medicine, as tested in the laboratory. And in respect to many and the most important of the contagious diseases, and especially as to tuberculosis, anthrax and rabies, it is in our power, thanks to the works of Koch, of Pasteur, of Chauveau, and others, not only to know their true nature, but also to apply, at least to the last two, positive prophylactic measures, the application of which lies within our own domain of veterinary medicine.

Allow me then to offer a few remarks upon the new facts which concern these three affections.

My first reference will be to tuberculosis, that protracted, insidious and fatal disease, which every year terminates so many human lives, and destroys, besides, so large an amount of valuable property in its animal victims, and upon which so much has been written; which has been attributed to so many specific originating causes; whose contagious nature has been so well demonstrated by Professor Villemin first, and subsequently by Chauveau, Koch, Toussaint and others; and which is now well understood as to its cause and nature, through the invaluable researches of Koch and Toussaint. To whom belongs the priority of the discovery is a question still in doubt. In 1881 Toussaint described "a mass of granulations" which he had observed on the field of the microscope, in examining tuberculosis cultures, and he formed the judgment that these granulations were the agents of virulency. These were small micrococci, which presented themselves in the liquid, either isolated, germinated or disposed in varying series of five, six, ten or more.

At a later period, however, Koch published the result of his observations, and in his view, these agents became a bacillus, pre-

senting itself in the forms of rods or bagnette, morphologically like those of anthrax. In these he saw the cause of the lesions which are always found, and which can be discovered and made evident by various manipulations, and they are of such value that they become the only means by which the true type of tuberculosis can be determined.

Whether the parasite of this disease, like that of anthrax, can be found under two forms, that of true bacillus, as made out by Koch, and that of spores as by Toussaint, are facts which will serve to settle the question of priority of title in the claim to the credit of the original discovery. However this may be, it is to-day admitted, and to all appearances, until proof is brought to the contrary, with justice, that Dr. Koch of Berlin was the first one to prove, not only its existence, but its presence in the various tissues and secretions of the body, where tuberculosis deposits are found. We all know that lesions are often discovered at post mortem examinations, which in their general appearance assume many of the characters presented by tuberculous deposits, but have only an external resemblance, and are not the true, but have, as they have been determined, the "pseudo" tubercles. For example, the different varieties of helminthes which in sheep, cattle, horses and other domestic animals produce the peculiar disease known as *bronchitis vermicularis*, also produce in the lungs, minute tumors, tuberculous in appearance, of pale yellow color, slightly greenish, and of various sizes, in which microscopical stronglyli, either isolated or rolled together in numbers, are found. These are really pseudo tubercles. In glanders, and in the pathological changes accompanying an embolism of the pulmonary artery, the tumors found of tuberculous appearance are all of the pseudo variety. Their true nature is proved by the absence of the bacillus of Koch.

True tuberculosis is then a parasitic disease, and we owe to the establishment of this fact, notwithstanding its insidious form, and its slow and latent progress, that its diagnosis can be positively established, simply by the presence of this little parasite. It now matters no more that the symptoms may not yet be well marked. There is no longer any possibility of a failure in the

diag-
scope

W
cian,
chara
to ani
mals
been f
that i
as yet
man
under
our m
doubt
ago, f
cow, v
ing su
tensive
udder
inocul
off.

In
edge, c
must b
the kee
produc
ness of
mal fo
in man
to conc

The
benefic
article
explain
Profess
he had
aminati

diagnosis. All uncertainty disappears the moment the microscope reveals the bacillus in its natural condition.

What important discoveries are these, not only to the physician, but to us veterinarians! I have said that the contagious character of the disease from man to animals, and from animals to animals, had been proved. We know that the feeding of animals with the tuberculous matter either of man or animals, has been followed by the development of the disease. We also know that inoculation has produced it, and though I am not aware that as yet any positive evidence has been recorded of contagion to man by feeding on tuberculous products of animals, we can understand and believe, however, that it may take place. One of our members, Dr. Peabody, has informed me of a case of undoubted contagion, in a child who died in Providence some years ago, from tuberculous meningitis. The father of the child had a cow, whose milk was used as food for the little one; the cow having subsequently died, a post mortem examination revealed extensive tuberculous lesions of the lungs. Without doubt her udder was also diseased, and I have no doubt that the child was inoculated through the milk with the disease which carried him off.

In the presence of facts like this, and with our present knowledge, obtained by the experiments instituted and recorded, what must be our obvious duties in the case? Must we not prevent the keeping of animals thus affected, and prevent the use of their products? But to do this, must we not be sure of the correctness of our diagnosis, and while admitting that tuberculous animal food cannot only produce tuberculosis in other animals, but in man also, must we not be certain that the victim we are about to condemn to destruction is truly tuberculous?

The discovery of Dr. Koch has already proved itself highly beneficial in human medicine, and I have already published an article in a recent number of the *AMERICAN VETERINARY REVIEW*, explaining the method of applying it to veterinary diagnosis by Professor Nocard of Alfort. He had several cows upon which he had pronounced a verdict of phthisis-pulmonalis, and the examination of the sputa of these animals under the microscope

confirmed the correctness of the diagnosis, the bacillus being present in the lesions found at the post mortem investigation. The same diagnosis made upon another animal was proved to have been erroneous by the absence of the bacilli of Koch from the sputa, and the corresponding absence of true tuberculous lesions, as proved by the autopsy. As many of us in this assembly may not have the article referred to, I beg to describe briefly the manipulations required by which the bacillus of tuberculosis can be rendered evident in any specimen in which it exists in nature.

The solution of Erlich, which is used, is made by shaking firmly 100 grammes of distilled water and 40 grammes of oil of aniline, with a saturated aqueous solution of oil of aniline, and filtering the whole. Of this, take 100 grammes, with 1 cubic centimetre of a saturated alcoholic solution of fuschine. A shade of mucosity is spread in a thin layer between two glasses; each of these is then rapidly passed two or three times through the flame of an alcoholic lamp, to dry and coagulate the albumen.

A few drops of the solution of Erlich is then poured into a watch-glass, and over the surface of this liquid the glass thus prepared is placed in such a manner that the side on which the mucosity is shall be in contact with the coloring matter. The duration of this contact is from 12 to 24 hours, if one operates under the ordinary temperature; or it may be reduced to 15 or 20 minutes, if the watch-glass is placed over an alcoholic lamp and left until a slight vapor begins to show itself on the surface of the liquid.

The colored glass is then washed with distilled water, dipped into a solution of nitric acid to the third, just the time necessary for all coloration to disappear. This time varies, according to the thickness of the mucosity dried on the glass, from ten seconds to a minute. The glass is again washed with distilled water, then put for a few minutes into a concentrated aqueous solution of blue of methylene or of vesuvine: washed a last time with distilled water, then dried; the glass, which had taken a handsome blue or marine color, is mounted with Canadian balsam. The bacilli of Koch appear strongly colored in red; all the other

eleme
or bro
G
ns, ho
therap
then,
Chauv
our do
ance.

Th
it nec
centur
this di
acknov
own co
ference
our m
to-day
called
black-l
to-day
terian
coverie
name I

Thi
conside
etiolog
less pla
under n
uniform
medicin
beyond
nature,
appear
manifes
bacterid
bacteria

elements of the preparation, celis, nuclei or microbes, have a blue or brown coloration.

Gentlemen, these are already grand results. It remains for us, however, to learn how far, in the more practical point of therapeutics, the discovery may be useful to mankind, and until then, and especially for us veterinarians, the works of Pasteur, Chauveau, Arloing and others, in relation to other diseases of our domestic animals are probably of greater value and importance.

The history of anthrax is too well known to us, for to make it necessary for me to treat it very largely. Looking back for centuries, among authors of works on animal husbandry, we find this disease described more or less accurately. Its existence is acknowledged in all parts of the globe, and we know that our own country is not exempt from its presence. But what a difference appears between the anthrax of times past and that of our modern epoch—between that of those days and that of to-day! And what distinction must we make between what was called anthrax, anthrax-fever, splenic apoplexy, gloss-anthrax, black-leg, black murrain, and what not else, and that which to-day we are mentioning under the names of bacteridian and bacterian anthrax; a change which is due to the world-famed discoveries of French investigators, at the head of which we must name Pasteur!

This affection, which for years we had been accustomed to consider as a single malady, whose true cause was ignored; whose etiology was surrounded with so many various theories, more or less plausible or fanciful; which presented itself to the observers under numerous and variable forms, but proved almost always uniform in the fatality of its result, is to-day, by experimental medicine, and by investigations in the laboratory, demonstrated beyond a doubt to be two diseases essentially different in their nature, notwithstanding the similarity in their prognosis and appearance, and bearing so close a likeness in several of their manifestations. One is known to-day in the scientific world as bacteridic, or the bacteridian anthrax; the other is the disease of bacteria, the bacterian anthrax, and corresponding, the first to

anthrax proper, carbunculous fever; the second to symptomatic anthrax.

The first is due to the presence and the development in the body of an animal, of a small individual parasite, aerobic in its nature—that is, living at the expense of the oxygen of the body—a bacteridie; the second being also due to a small creature, a bacteria. But these individuals are so different in their nature, that if the first one is introduced in the general circulation it gives rise to an affection sure to be fatal in the end, while the second treated in the same manner produces merely a slight and temporary disturbance, and besides this imparts to the animal experimented upon an immunity which protects him against direct inoculation. Death, or at least serious accidents, occur only when the bacteria or the liquid that contains it is introduced into the meshes of the connective tissue, in which it finds elements for rapid proliferation, and produces its fatal effects.

These facts are the results of experiments made by Messrs. Arloing, Cornevin and Thomas, and published in their excellent monogram on bacterian anthrax, for which they received the prizes of the Academie des Sciences and that of Société Nationale d'Agriculture of France.

The first discovery of the true element and life of the bacteridie is due to Pasteur. Arising at first, it may be said, as a result of his numerous researches on the subject of fermentation, they brought him later to prove the true nature of those contagious diseases which by degrees are coming to be classed under the more positive name of parastic affections, and amongst which various affections of the silk worm, the pebrine and the flacherie, septicæmia, chicken cholera, hog cholera, etc., have been placed.

The second discovery, that of the bacteria of symptomatic anthrax is, so to speak, but the consequence and fruit of the first. But with both discoveries a series of investigations and researches brought this great chemist and his followers to another of no less importance. I refer to the prophylaxy of these diseases. And it is thus that to-day we possess the same means of prevention against them that the human physician has at his disposal for the protection of mankind from that terrible scourge of our race,

small-p
vaccina
worker
well as

The
writing
the suc
failures
through
contine
in the
nation,
from th
quote t
tion. I
ated vir
peculiar
diminish
vitality,
to retur
fore.

As
parts of
derived
ent this
words or
relating
methods
as most
be please
practice.

The
pal:—th
anthrax,
immunity
disease is
dies, the

small-pox. If, then, to Jenner we owe the grand process of vaccination against small-pox, to Pasteur, Arloing and their co-workers we owe the vaccination of both species of anthrax, as well as the bacteridian as the bacterian form.

The time is too short for me to recall to your mind all the writings that have been published on these subjects, or to detail the successful experiments that have been reported, as well as the failures that were against them. It is now an admitted fact throughout the world, and demonstrated in every portion of the continent of Europe by hundreds of thousands of living witnesses in the forms of the animals whose lives it has saved, that vaccination, if we may use that word, is the grandest thing resulting from these modern discoveries. I use the word vaccination, as, to quote the expression of Pasteur and Bouley, it is a true vaccination. It is the introduction of the modified virus, of the attenuated virulent element, which is just changed into vaccine by the peculiar manipulations of the laboratory, which though they diminish the strength of the virus, do not remove its entire vitality, since when placed in favorable circumstances, it is likely to return to its former condition and become as dangerous as before.

As the two forms of anthrax are quite common in various parts of this country, and satisfied, as I am, of the benefit to be derived by vaccination, I thought it might be of interest to present this meeting with the material used, as well as to say a few words on their application, it being understood, however, that in relating the process of application, I have no wish to ignore other methods, but present these as being considered by me, at present, as most practicable, and with the hope that some amongst us will be pleased to try them either as a mere experiment or in actual practice.

The process inaugurated by Pasteur is based upon this principle:—that when an animal has suffered from a mild attack of anthrax, he is protected at least for a certain time by an acquired immunity, and has become refractory—and if the attack of the disease is produced by the introduction under the skin of bacteridies, ttenuated in heir virulency, the subject is also protected,

and cannot be killed with anthrax, at least for a certain time whose length is now determined to be from 18 to 20 months.

This being established, and in order to avoid giving the animals a disease which might prove fatal for some, two protective inoculations are made. The first is with a very attenuated bacteridie, the first vaccine, which give to the animal only a very slight fever, characterised by a rise in the temperature; the second, made twelve or fifteen days later, with a more virulent bacteridie. It is the second vaccine which would kill a certain number of animals, were they not already partially protected by the preceding vaccination. But this partial protection exempts them from all infection beyond a slight fever, and when relieved of this the animals are perfectly vaccinated, and have become entirely refractory to the disease.

The liquids of inoculation are delivered in closed tubes, and are introduced with the syringe of Pravaz. The first inoculation is made on the inside of one leg in sheep, and on one side of the neck or of any part of the body where the skin is thin in other animals; the second being introduced on the opposite leg or side. The rod of the syringe is divided into a given number of parts. For sheep the quantity to be injected is indicated by each one of these divisions, the dose for the large animals being double. In this way one will see that a syringe full which may serve to operate on eight small, will serve but four large animals. It is of the greatest importance that the instrument should be perfectly clean, and for this reason it is better when not a new one, and when it has already been used, to have it thoroughly cleansed and heated whenever a new operation is to be performed. I present you with some of these tubes, which I have had recently imported for this occasion. I understand the liquid has to receive a special preparation when exported from Europe. It will, no doubt, be very interesting to all to see the trial made, and the result made known.

This is the process of vaccination for anthrax proper—splenic apoplexy. But as this disease differs entirely from symptomatic anthrax, gloss anthrax, black leg, etc., etc., the process which protects from the attack of the first disease will be without result

for the
has to b
are, aga
reduced
By expo
tempera
85°. T
sheep an
terval of

To o
centimet
having a
to conta

The
which ha
mortar v
through
water are
til about
used, tha
operator
linen sif
trituration
the amou
ten cubic
syringe t

The c
experien
follows:
short, up
a little ca
a way tha
wards.
by the tre
fifteen dr
carefully
afterward

for the second. To prevent its development a special vaccine has to be employed. Here are samples. As you observe, there are, again, two kinds or degrees of vaccine substance, one much reduced in strength, the other less so. How are they prepared? By exposing the virus, taken from carbuncular tumor, at various temperatures. One has been exposed at 100° heat, the other at 85°. The first gives and the second strengthens immunity in sheep and cattle. Both of them must be introduced at an interval of from five to eight days.

To operate, a hypodermic syringe of the capacity of five cubic centimeters (a little more than one fluid drachm) is necessary, having a divided rod, in order to make the piston of the syringe to contain a given number of doses.

The contents of one of the papers of prepared vaccine, that which has been exposed to a temperature of 100°, is placed in a mortar which must have been carefully cleaned by being passed through boiling water. Upon this powder two or three drops of water are poured and it is triturated, water being added to it until about ten cubic centimetres (or two a half fluid drachms) is used, that quantity being sufficient to dissolve the vaccine. The operator has then a brownish liquid, which is then run through a linen sifter to remove any soft particles that may have escaped trituration. The sieve must first have been moistened, so that the amount of liquid solution of vaccine after filtration is about ten cubic centimetres, or a sufficient quantity to fill up the syringe twice.

The operation is simple. It having been demonstrated by experience that the tail is the best spot to vaccinate, it is done as follows: The hairs of the lower end of the organ being cut short, upon a given surface, and this being carefully washed off, a little cavity is made with a small trocar under the skin in such a way that when the tail hangs down the cavity is turned downwards. The syringe is then introduced into the opening made by the trocar and the necessary quantity of liquid, from ten to fifteen drops, according to the age of the patient, is slowly and carefully introduced. A slight pressure upon the opening will afterwards prevent the exit of any portion of the injected fluid.

A second vaccination is performed some ten or thirteen days after, a little behind and on one side of the first, carefully following the same method.

The result of these manipulations will be a state of immunity. Inoculations performed some days afterwards with the strongest virus will fail to produce any bad result, and this protection against the disease will last for a length of time extending several months.

Grand and beneficial as these results are in the various points of view from which they may be considered, I do not know if they are not surpassed by those already obtained in relation to another disease, hydrophobia.

This disease, so terrible in its aspect and results, so treacherous in its development, and so insidious that its name alone is almost a synonym for a frightful death, has now lost a great deal of its character by the recent discovery which we also owe to Pasteur and to his collaborators. And when we consider that we are on the point of mastering it, of protecting from its attacks an animal which is often almost a member of our households, and thus in many instances of protecting ourselves, and perhaps preventing its development in the unfortunate human being who may have become inoculated with it, I cannot help repeating it, the question must present itself, which of these two discoveries of Pasteur, that of anthrax or that of rabies, will be the more beneficial to mankind.

Mysterious in its incubation, and so horrid in its symptoms and results, Mr. Pasteur has been studying its nature since 1880, and at last has succeeded in establishing the fact of its parasitic nature, and more than that, of giving by various processes a refractory condition to animals properly inoculated with attenuated virus. I specify the "attenuated," for it has been proved that by the successive passages through given organisms, the virus would lose a certain amount of its virulency and, so to speak, become attenuated.

The results that were obtained in his laboratory were accounted to be so important that a committee of scientists were appointed to test them. What were those results? Firstly, the

fact that
could be
be rendered
kind is

The
"W
vanced
the imp
the pre
as it ha
organis
can be
Pasteur
them b
they w
tain kn
those v
having
inocula

Of
judge a
them.
first ste
out of
tion of

Mar
by vac
long th
a quest

But
questio
was sug
which l
disease
inflicte
nated v
ulated v

fact that the virus could be attenuated, and secondly, that dogs could be rendered refractory to rabies, just as other animals may be rendered refractory to anthrax by vaccination, and as mankind is rendered refractory to small pox by a similar operation.

The Commission reports:

"We are happy to bear witness to the truth of the fact advanced by Mr. Pasteur. Yes, science at his hands has solved the important problem rendering the dog refractory to rabies by the preventive inoculation of an attenuated virus of that disease, as it has already succeeded by an identical process to give the organism of sheep a complete immunity against anthrax. There can be no longer any doubt about it. All the dogs that Mr. Pasteur has shown us as refractory, by the immunity given to them by him, have stood the experiments of inoculation to which they were submitted, with the strongest virus and the most certain known manner, while most of the dogs used as witnesses, or those which were submitted to the same experiments without having first been protected against their effects by a preventive inoculation, did not resist them and have died with rabies."

Of the value of these results we veterinarians will be able to judge appreciatively, and we shall, no doubt, take advantage of them. Of course, much remains to be done. This is only one first step, and it most probably means the ultimate slow stamping out of hydrophobia; this, perhaps, depending also on the duration of the immunity. This is yet to be studied.

Mankind is protected from small pox for a number of years by vaccination, and cattle from anthrax for months, but how long this immunity of dogs against hydrophobia will continue is a question that cannot yet be answered.

But this is not all. The Commission has another important question to solve, partly presented by Mr. Pasteur, and which was suggested to him by his observations on the animals upon which he has experimented. It is that of the prophylaxy of the disease in mankind. It is to know whether after a bite has been inflicted, the preventive action of the inoculation with the attenuated virus can be efficacious in destroying the effect of the inoculated virus when introduced by a wound.

Experiments upon animals in the laboratory seem to solve this question in the affirmative. But before it can be applied or tested on human subjects, many positive facts will have to be presented in order to justify its application in human medicine.

Let us hope that at a date not remote the dreadful fear of hydrophobia will no more exist, and that once again science will have succeeded in mastering and in remedying another of those contagious scourges which have made such fearful havoc amongst men and animals.

EDITORIAL.

CHICAGO CATTLE RAISERS' CONVENTION.

The immense value of the property embodied in the live stock of the West, and the extent and imminence of the dangers to which it has in late years been exposed, has excited a degree of anxious interest in those whose fortunes are involved in this branch of trade, which was sure to lead to the discussion and settlement, sooner or later, of the vital and practical questions naturally suggested by the experience and the necessities of the community of stockmen. It has for some time been evident that the period for this could not long be postponed, and the matter has at length culminated in a convention of cattle raisers, who assembled in Chicago on the 14th of November. This meeting was the result of a suggestion originating with Mr. Thomas Sturgis, Secretary of the Wyoming Territory Cattle Association, and was attended by some two hundred representative stockmen. A number of prominent veterinarians were also in attendance as delegates and in other capacities, among whom Drs. J. W. Gadsden, of Philadelphia; J. D. Hopkins, of Cheyenne; E. Salmon, of Washington City; W. H. Paaren, of Chicago, and others, are mentioned. A number of interesting papers were read by these gentlemen, and the respectful attention with which they were received by the convention gave ample proof of a well-merited appreciation of the value of the suggestions which the professional training and experience of the authors had qualified them to offer.

The subject
erinary San
mal Indust
deep intere
measures i
however, b
bodying so
the labors
excellent s
views whe
without la
terest, I w
all States a
rian, whose
gious dise
should be
State." T
time thoug
longer over

We are
may expect
templated
sult in its f
terprising
make them
contribute
experience

ONLY A F

We hav
recent issu
in any att
out of ple
causes, fro
inarians in

The subjects principally discussed were Pleuro-Pneumonia, Veterinary Sanitary Medicine, and the labors of the Bureau of Animal Industry. It is to be regretted that Professor Law, whose deep interest in all questions relating to the institution of sanitary measures in this country, was not present. He was represented, however, by a letter, which was read before the convention, embodying some severe, and, perhaps, not unmerited strictures upon the labors of the Bureau of Animal Industry. We notice some excellent suggestions in this letter, and especially commend his views where he writes: "As I am now in a position to speak without laying myself open to the charge of possible personal interest, I will further suggest that the convention should urge, in all States and Territories, the appointment of a State Veterinarian, whose duties, besides attention to all outbreaks of contagious diseases in animals within the limits of his jurisdiction, should be to keep up a supervision of animals imported in the State." This suggestion is one of which we have all for a long time thought favorably, and which we must hope will not be longer overlooked in legislation.

We are not yet prepared to say to what extent veterinarians may expect to be recognized or affected by the terms of the contemplated organization, if the labors of the convention should result in its formation, but we have no doubt that some of our enterprising colleagues, if given the opportunity, will be sure to make themselves felt in its operation, and prove their ability to contribute valuable service by the practical application of their experience and skill in the laws of sanitary veterinary medicine.

ONLY A FEW CASES OF PLEURO-PNEUMONIA IN THE UNITED STATES.

We have called the attention of our readers, in several of our recent issues, to the difficulties which were sure to be interposed in any attempt that might be made to compass the stamping out of pleuro-pneumonia. They were to arise, among other causes, from the difference of opinion on the part of certain veterinarians in the Eastern States who denied the existence of that

disease, especially amongst the cattle of the State of New York. Until recently the expression of this opinion has been confined to the local newspapers, but we now find it copied in the Western papers. The *Chicago Evening Journal*, in publishing the report of a meeting of veterinarians held in that city, says: "A meeting of unofficial veterinary surgeons has been in progress in Chicago during the week. It has been attended by a large number of the most skilful and experienced members of this profession that the country contains. At one of their sessions the question of pleuro-pneumonia was discussed, and the prevailing opinion was expressed that but *few cases of this disease had ever existed in the United States*, and that the cattle slaughtered under the humbug pretense that they were affected by it were suffering from merely ordinary complaints." This article refers probably to the meeting of the so-called "National Veterinary Medical Association," and has undoubtedly been taken from the set of resolutions which follow, and which we publish to show the objects of those who issued it:

To all interested in the welfare of live stock:

At a regular meeting of the National Veterinary Medical Association, held at the Sherman House, Chicago, Nov. 11, 1884, composed of delegates representing the different State organizations, it was resolved that some official action be taken by this organization looking forward to legislative action for the better protection of live stock from diseases of a contagious type, by *calling the attention of Congress to the advisability of appointing properly qualified veterinary surgeons to official positions*, and believing that stock raisers and the general public are not fully aware of the extent of diseases of a contagious nature, that are transmissible from one animal to another, and from animal to mankind, and vice versa; and it being the especial province of the educated veterinarian to deal with disease in its various aspects, particularly so in preventing the spread of the same, as well as relieving those affected;

Resolved: That we ask the hearty co-operation of all stock growers, agricultural societies, and all persons interested in the live stock interests of our country in furthering this object in view.

Great numbers of valuable stock, as we believe, have been lost through lack of proper treatment, which might have been saved if treated by properly qualified practitioners, who could discriminate between diseases of a contagious and non-contagious character, which discrimination would be a financial benefit to all concerned.

This being the sense of the meeting, that copies of the above be drafted and presented to all interested in the welfare of live stock.

Belie
would be
inary Me
composed
protection

(The
the circ
The
from th
ified vet
tions; t
McLean
other ha
inarians
especial
and tha
where
States o
bia, mu
cases of

This
veterina
in rathe
like this
been lat

THE
We
present
commur

Believing that by concerted action only in a matter of such grave import it would be advisable for the appointing power to confer with the National Veterinary Medical Associations, and the various State organizations of which it is composed, as the best means of accomplishing what is desired, namely, the better protection of live stock from contagious diseases.

Respectfully,

DR. R. W. FINLAY,

President of the New York State Veterinary Medical Association and
Veterinary Editor *Spirit of the Times*.

T. BENT. COTTON, V.S., Ontario,

Second Vice President Ohio State Veterinary Medical Association.

A. H. BAKER, V.S., Montreal,

Principal of the Chicago Veterinary College; Veterinary Editor of
The American Field and *The Chicago Horseman*

LOUIS A. GREINER, Sr., V.S.,

Delegate of the Veterinary State Association from Indiana.

(The italics are ours, but we are thankful that the syntax of the circular is not.)

The impression which an uninformed reader would receive from the above must necessarily be that so far no "properly qualified veterinary surgeons" had ever been appointed to official positions; that the work done by Professors Law, Salmon, Paaren, McLean, Lyman, Miller, Gadsden, Michener, Hopkins and many other has been out of their province; that they were not "veterinarians educated to deal with disease in its various aspects," and especially such diseases as those which they have actually treated; and that the report of Dr. Loring before the cattle convention, where he reported that 560 cases had been condemned in the States of New York and New Jersey and the District of Columbia, must have been at least exaggerated, inasmuch as only a few cases of this disease had ever existed in the United States!

This question of pleuro-pneumonia has already brought the veterinary profession of America before that of the whole world in rather a ridiculous light, and the effect of new publications like this will certainly not improve the condition. We must have been laughed at. What next?

THE COLUMBIA AND AMERICAN VETERINARY COLLEGES.

We promised, in the November number of *THE REVIEW*, to present the profession with an answer to the accusation made in a communication printed in the *Journal of Comparative Medicine*.

Having, on further consideration, thought proper to refer the matter to the President of the Board of Trustees of the American Veterinary College, these gentlemen, after consultation, have asked us to publish the following letter, addressed to the editors of that journal:

To the Editors of the Journal of Comparative Medicine:

GENTLEMEN—The communication in the last issue of your journal relative to the Columbia Veterinary College, has been brought to my notice.

In reply, I would say that, from papers presented to me at the time of the transfer to the American Veterinary College of all the privileges and charter of the Columbia, including resignations, resolutions, &c., there is no doubt as to the final extinguishment of that institution, and that an attempt to re-establish the institution or to reinvest it with corporate powers, on the part of those who have pretended so to do, will, if persisted in, pave the way to serious complications, and result in discomfiture to any one attempting to continue in such a course. I shall be pleased to show you the proofs of the above statement, and hope to satisfy you of the veracity and propriety of our action in the matter.

Respectfully yours,

SAMUEL MARSH,

President of the Board of Trustees, American Veterinary College.

REPORTS OF CASES.

LACERATION OF THE LONG WASTUS MUSCLE—FRACTURE OF THE TIBIA.

By W. H. PENDRY, D.V.S.

I was called some distance out of the city to see a bay gelding, eight years old, about fifteen hands high, said to have a dislocation of the patella. On my arrival at the stable I found the animal in a loose box, and at once saw that my information as to the trouble was incorrect. At first sight, I at once came to the conclusion that I had a fracture in the upper portion of the near hind leg to deal with, and so examined for that trouble; I tried to get the horse to move, but he refused to go a step unless actually forced, and a few minutes' examination soon convinced me that I had no ordinary case of lameness. There was apparently little or no swelling, hardly any increased heat, but the slightest pressure about the middle of the femur gave great pain. I proceeded to get the history of the case,

which
about
eight
ten d
drive
sligh
dead
reach
seem
much
did s
and h
cultry
ing th
sion
troch
attach
infor
either
blister
at on
canth
mana
when
once,
once
broke
fractu
the ci
as to
the li
throug
peare
I noti
dissec
being
cle att

which was as follows: The present owner had had the horse about one month, having bought him for a fast road horse, for eight hundred dollars, having got a record of about 2:40. About ten days before the day I was called, he started for his usual drive, when, on leaving the stable, he found the horse went *slightly* lame. He drove for three or four miles, when he got so dead lame that he was left at the first stable that could be reached; some liniment was got and applied to the parts that seemed affected, and in about a week the owner found him so much better that he told them at the stable to turn him out. They did so, and as soon as he reached the grass the horse got down and had a good roll, and when he went to get up he had difficulty in doing so, and when up was on three legs. After reviewing the history and a further examination, I came to the conclusion that there was either an incomplete fracture of the subtrochanterian crests of the femur, or a laceration of some of its attachments, which of the two I could not satisfy myself, and so informed the owner, stating at the same time the treatment in either case would be the same, viz.: perfect rest of the parts, and blistering. I was instructed to treat the case as I thought best. I at once secured a sling, into which I put the horse, applied a cantharidis blister, and left him, after giving instructions as to management. Everything was apparently going along all right, when, on the 14th, I received a telephone message to come at once, as the horse had got down, and his leg was broken; I at once went there and found him slung all right, but his leg was broken sure; the inferior extremity of the tibia was badly fractured. I at once destroyed the horse and took advantage of the circumstances—unfortunate or otherwise—to satisfy myself as to the exact original injury. I made a careful incision along the line of the femur carefully laying back each muscle as I cut through it, I arrived down to the external face of that bone; it appeared to be all right, and so with its third trochanter, but I noticed there was a dark coloration just behind it, and on further dissection found there had been considerable hemorrhage, there being large ante-mortem clots. I inserted my finger into the muscle attached, and found it tore very easily. I dissected still fur-

ther and found I had a laceration of the anterior portion of the long vastus muscle. The interesting question is, could this injury have been the cause of the first slight lameness, resulting in excessive lameness while driving, there must have been considerable violence to have caused it, and I think beyond a doubt, the most was due to the kicking while rolling; but did the trouble originate then? I think not. Some weakness was caused by a breaking away, which, no doubt, with proper treatment, could have been repaired; but, in my opinion, it is quite a question whether any treatment would have been successful after the second injury. After the post mortem, I gave it as my opinion that the injury discovered could not have been successfully treated, yet claimed I was justified in recommending treatment such as I did.

I ought to say that it was no part of the sling proper that gave way and let the horse down, but an additional part added by the parties at the stable, out of kindness, in trying to make the horse more comfortable.

MULTIPLE CAUDAL ABSCESES AND FISTULOUS TRACTS CAUSED
BY INGROWING HAIRS.

By W. H. GRIBBLE, D.V.S.

I would like to ask my fellow members of the veterinary fraternity if they have met with cases that correspond with the following:

Case.—No history whatever; a bay colt, very large for its age, was brought to me with a large swelling at the base of the tail. At the lower part of the swelling, at about where the hair of the tail proper commences, was a small opening, discharging a very little pus, and obtaining fluctuation at the swelling. I concluded it to be an abscess, that had been discharging from the opening mentioned and had become plugged, giving rise to the enlargement by accumulation of pus. I found that the pus was contained in several sacs, each of which was lanced, and a seton passed through to secure drainage, and the animal taken home. In a few days it was returned with a hard swelling about six inches below the one already mentioned.

The
that, ab
there se
about
gether,
black
found
tail, w
Conclud
inserted
above.
when im
one end
to the b
Dissecti
off the v
sutures,
caused th
his know
where th
months p

My c
and infil
reached a
continued
formed,
charged
again bec
ing. Bu
whole len
produce
the turni
ing throu
have been
produce i
this fistul
upper alo

The owner now called my attention to a curiosity, which was that, about fourteen inches below the opening I have spoken of, there seemed to grow out of a depression a bunch of white hair about as large as my finger, very closely packed together, and each individual hair much coarser than the black hairs of the tail. I pulled a few of these and found they appeared to withdraw fully an inch from the tail, whereas the root proper was as any other hair. Concluding there must be a sinus, I pulled out the white hairs, inserted a probe, which passed to the opening fourteen inches above. Obtaining the consent of the owner, the sinus was opened, when imagine my surprise to find white hair growing in it from one end to the other, the hair of the upper part reaching nearly to the bottom, I having pulled out all that had passed through. Dissecting an inch of the upper part, took hold of it and stripped off the whole in one piece, sewed up wound with wire interrupted sutures, sent animal home and have not seen it since. Now, what caused the fistula? The owner says there had been no swelling to his knowledge until brought to me; no discharge of pus from where the white hairs were; these last, he first noticed some six months past.

My opinion is, that there was an injury received, pus formed and infiltrated between the superior coccygeal muscles until it reached a weak spot in the skin of the tail and there found exit, continued discharging until a fistula with indurated wall was formed, became plugged superiorly, and the pus then made discharged from the opening mentioned, when I saw it, then it again became stopped above this opening and caused the swelling. But, now, what caused the formation of white hair the whole length of the sinus, from where came the hair follicles to produce this hair? At its superior part it was probably due to the turning of the skin and the hair becoming bleached by growing through the sinus. As nature produces no hair on parts that have been destroyed, even by a strong blister, then how could she produce it on parts that had not been covered with skin? or could this fistula be present at birth, and the swelling and pus at the upper alone be due to injury?

REVIEWS.

ANIMAL CASTRATION, by A. LIAUTARD, M.D., H.F.R.C.V.S., etc., etc.
(Wm. R. Jenkins, New York, and Balliere, Kindall & Cox, London, 1884.)

This concise and complete little book of 148 pages is a veritable godsend to the veterinary surgeon and to the *rural economist*, in these days of superstition, when animals are still gelded at the wane of the moon, and educated veterinary surgeons buy "secrets" of "difficult operations" from self educated gelders, whose long practice has simply made them expert in performing what any good anatomist should do. Professor Liautard commences with a short review of the early history of castration, and designates the causes which demand the operation. He calls attention to the change of form which gelding produces in the development of the animals, but might, perhaps, have laid more stress on the value of this change in selecting the age at which an animal is to be castrated, so as to remedy defects of breeding, and reduce or increase the proportion of development in the fore and hind quarters, and adapt the animal to the use for which he is intended—draught, hunter, etc. The author leaves the question of age of the animal and season of the year at which castration is to be performed entirely to the discretion of the operator. After the preparation of the animal as for any surgical operation, the author compares the merits of operating standing or after casting the horse, he calls attention to the risk of injury in casting young animals being nul, while the risk of struggles in the standing animal, the pulling of the spermatic cords, predisposing to champignon, formation of hernia, etc., is great, and says, "we submit the point to the intelligent judgment, whether in the presence of the possibilities of extremely dangerous accidents, it does not become the duty of the veterinarian to prefer the mode of securing this patient in the supine position, both in his own behalf and that of his employer." The anatomy of the inguinal region and of the testicular organs is clearly treated, and the understanding of it is aided by several good plates through the book.

The
cord in
include
ecrasen
the lig
out op
The
is made
species
the ins
and wi
animal
House
tured.
tion, a
safety
owner
method
cattle
prove n
be reg
anatom
Three
ordinar
needed
tions a
dents o
to chan
ter on
of cast
"it is c
tain he
objecti
The
many
of the
is a so

Three methods of operation are given: 1. Section of the cord immediately after opening the envelopes of the testes, which includes "scraping, tearing, torsion, linear, crushing, by the ecraseur and firing by the actual canterly." 2. Slow section by the ligature and clamps. 3. Crushing and double twisting without opening the scrotum—bloodless.

These various methods are treated in detail, and special point is made of the dangers of each, and their application to different species of animals and to individuals. A number of cuts show the instruments used in torsion and the method of applying them, and will favor the introduction of a useful operation for young animals, too little employed in the United States. The ecraseur, House clamp and clamps for firing, are each described and pictured. The method by clamps, and especially the covered operation, are described at length. Dr. Liantard believes that the safety of the operation by clamps more than compensates the owner for the second visit of the veterinary surgeon, which this method necessitates. The several operations for castration of cattle and other animals are described, and some of them may prove new and interesting to the American practitioner. It is to be regretted that Dr. Liantard has not devoted more space to the anatomy of cryptorchids, which he was so especially fitted to do. Three good plates give the types of the hidden testicle. The ordinary sequelæ of the operation, the mode of healing and needed care of the animal are briefly reviewed. The complications are thoroughly reviewed, commencing with the minor accidents of colics and tearing of clamps; detailed attention is given to champignon, but more would have been acceptable in the chapter on hernia. After reviewing the merits of the various methods of castration, the author decides for that of "castration by clamps," "it is easy and quick in its performance; performs the most certain hemostasis upon the artery, and notwithstanding some slight objections, merits a preference over all others."

The chapter on castration of females will be a novelty to many Americans, and will remind others of their neglect of one of the valuable operations in veterinary surgery, which, in Europe, is a source of great profit to the dairyman. After a few words

on the merits of the operation and the conditions favorable to it, Dr. Liantard describes the anatomy of the genital organs in the cow and mare, and aids the description by plates, giving also plates of the instruments used in the various methods. Spaying of the sow—bitch are described, but only the lateral operation in the latter, no notice being taken of the valuable medium operation; the chapter ends with the castration of cocks, accompanied by a good plate. The only regret felt by the veterinary reader of this well-worded and accurate book, will be that there is not more of it, while the farmer and owner of animals will find it interesting reading, and will learn that while castration is a comparatively simple operation, it may be attended with great dangers, and that it requires all the care and knowledge that should be given to any surgical operation that is always attended with danger.

HUIDEKOPER.

ART OF TAMING AND EDUCATING HORSES, by D. WAGNER.

This large volume of over 1,000 pages is divided in a number of chapters which treats of the various means by which the education of horses, so far as taming and breaking is concerned is handsomely treated and presented to the readers in such a manner that after reading them, every one will feel thankful to the author for the large amount of information which is collected in the first twenty chapters of the book.

For us veterinarians, however, we cannot but regret that the work does not stop there, and we would certainly have considered it of much greater value had the part which treats of diseases and of their treatment been omitted. We have already too many of those works, "every man his own horse doctor," and we too well know of their little value to say any more of this new addition.

Mr. Wagner deserves, however, great credit for the researches he must have made to collect the material he offers in his book, and though the great majority of the plates which illustrate it are reproductions from others, they are so handsomely printed that their examination will gratify the most particular. We hope

"Art
repay
plete i

PHY

Th
purpos
veterin
week, g
necessa
leaved
and is e

SIMPLE

It is
abbrevi
which t
written
ject for
tions an
work re

The
Society
York, or
Dr. Liau
Mem
tard, Dix
L. McLe
being pro

"Art of Taming and Educating Horses" will find a large sale to repay the author for all the labor he must have done to complete it.

PHYSICIANS' VISITING LIST FOR 1885, (H. Blakiston, Son & Co.)

This forms a small *porte feuille*, which not only answers the purposes of the physician, but suits also very well those of the veterinarian. Each page, representing the attendance of the week, gives room to record twenty-five patients, a number which, if necessary, can be increased to fifty by the purchase of an interleaved list. It is as compact and complete as it can be made, and is equal, if not superior, to all others.

SIMPLE AILMENTS OF HORSES, by W. T. (Cassell, Petter, Galpin & Co.)

It is to be regretted that the author should have seen proper to abbreviate his name in signing this peculiar form of vade mecum, in which the diseases are treated in alphabetic order. It is concise, written in his peculiar manner, and will prove an interesting subject for those who will carefully read it. The subject of operations and the concise list of prescriptions which completes the work render it still more useful.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular meeting of the New York State Veterinary Society was held at the American Veterinary College, New York, on Tuesday, October 14th, 1884, at 8 p. m., the president, Dr. Liantard, in the chair.

Members present were: Drs. Burden, Coates, Robertson, Liantard, Dixon, Burget, Michener, Bretherton, Bath, Pendry, Ryder, L. McLean, Charum and Allen; Dr. Miller, of Camden, N. J., being present on invitation.

Minutes of last meeting were read and on motion adopted.

The essayist of the evening, Dr. Charun, then read a paper on Insolation, which more particularly spoke of those cases of sunstroke that had come under his notice, giving the result of his particular treatment in each case, some of which he had treated with sedatives, others with stimulants. The paper did not seem to satisfy Dr. L. McLean, who wanted to know what real or special disease the essayist had reference to, what was his reason of giving in one case sedatives, and in another the opposite, and with his usual persistency, pressed him for minute particulars of the disease he had reference to, wanting the pathology in the different stages, etc. Dr. Charun gave a general answer, in which he stated he had not had the opportunity to make post-mortems in the cases he had treated, and so was unable to give the lesions; he had simply treated symptoms. Where there was excessive prostration and loss of vital power, he had used sedatives, and where the pulse hard and there was threatened congestion, he had used stimulants.

Dr. Coates said he had one case where the temperature was over 110° F., which recovered under his treatment, which was always stimulants; they were certainly indicated, as there was exhaustion.

Dr. Burden mentioned two cases he lost where the temperature was respectively 110 and 109. He had generally found the temperature very high; his treatment, which was generally successful, was stimulants and injection of cold water. In reply to Dr. McLean, said the disease he had reference to was sunstroke.

Dr. L. McLean said, he considered the term altogether too general. He congratulated the essayist on his successful treatment of "symptoms," and did appear willing to accept his ideas on the subject under discussion as scientific knowledge of the trouble he had been called upon to treat.

In reply to Dr. Bretherton, the essayist said that he would give sedatives where he found the temperature high and the pulse full. In treating cases of sunstroke, he relied mostly on aconite, whiskey and liquor ammonia acetatis, applying cold water to the head and lower extremities; although he had never seen laminitis follow sunstroke, yet he had always found the lower extremities

very hot
gestion
not think
in the ca

Dr.
sider the
The que
chair, if
cult to r
the revis
years ag
at consi
In refer
all over
why lan

A v
App
Holling

Unc
the me
had bee

Dr.
fession
to oppo
lative l

Dr.
in a be
momen
to the
posed
of legi
business
Dr. Co
it was

The
chair
meeting

very hot; he applied ice water to the head when he feared congestion of the brain; and, in reply to Dr. Michener, said he did not think that injections of ice water would have been of service in the cases he had treated.

Dr. Liantard said he thought the Society would have to consider the paper one asking for information more than giving any. The questions asked by the essayist ought to be answered by the chair, if not by individual members. Some were somewhat difficult to reply to, but he thought that if he would procure a copy of the revised edition of *Stonehenge*, which was published about 14 years ago, in which Dr. Large took the question up, with another, at considerable length, he would find much valuable information. In reference to the cold water treatment he had seen it applied all over the body with very great benefit. He could not see why laminitis should not follow sunstroke; he thought it could.

A vote of thanks was extended Dr. Charum for his paper.

Application for membership was received from Dr. W. G. Hollingsworth, which was referred to the Board of Censors.

Under the head of unfinished business, the secretary reminded the meeting of the question of the proposed legislative bill, which had been laid over for consideration.

Dr. L. McLean said he did not consider the veterinary profession was ripe to advocate any legislative bill, or in a position to oppose empiricism, and would move that the question of legislative law be dropped.

Dr. Pendry considered the veterinary profession was never in a better state to advocate legislative law than at the present moment; the motion and remarks of Dr. L. McLean were not fair to the profession, nor to the gentleman who had drafted the proposed bill, and, in his absence, he would move that the subject of legislation be not dropped, but be made a special order of business for the next meeting. The motion being seconded by Dr. Coates, and there being no seconder to that of Dr. L. McLean, it was put to the meeting and carried.

There being no further business before the meeting, and the chair having appointed Dr. Dixon essayist for the following meeting, a motion to adjourn was carried.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held on October 2nd, 1884. President Zuill filled the chair. On roll call Drs. Zuill, Gaentner, Glass, Hoskins, Campbell and Hance responded. The minutes of September meeting were read and adopted.

The essayist, Dr. T. F. Hance, brought forth the subject of nephritis, dwelling particularly on the pathology of the same, and the great value of the microscope in diseases of the urinary organs, from a diagnostic point. In connection with his remarks a number of slides were shown under the microscope, presenting the normal as well as pathological appearance of the kidneys. He believed that nephritis was more frequently present than diagnosed, though, in this, he was strongly combatted by other members. Many interesting points were brought out, among them the probable connection of edematous limbs and diseases of the kidneys of a functional character.

It being the annual meeting, an election of officers for the ensuing year was held, and the following members were elected: President, W. Horace Hoskins; Vice-President, Dr. T. F. Hance; Secretary and Treasurer, Charles T. Gaentner; Board of Directors, Drs. S. C. Campbell, W. B. E. Miller, W. L. Zuill, T. B. Rogers and Ward B. Rowland.

In a few brief remarks on the past history and work of the Association, the new President assumed the chair, after which a motion for adjournment was received and carried.

W. HORACE HOSKINS, *Secretary.*

CORRESPONDENCE.
HONEST CRITICISMS.

Editor American Veterinary Review:

DEAR SIR.—It is quite evident from official reports in recent numbers of the *American Veterinary Review*, that a great many veterinary surgeons are only too glad and willing to make themselves ridiculous by the indiscriminate and illegitimate appropriation and use of the title "Dr."

So
"Dr."
colleg
eine o
erinari
degrec
Th
quack
sional
wild I
It
medic
lated t
tions.
erinary
admire
legitim
British
with th

DE
veterin
one. T
tleman
from h
off as f
I h
to your
your co
Las
singula
me. U

Some veterinarians are legitimately entitled to the title of "Dr." because they have been duly graduated from schools or colleges which confer the degree of doctor of veterinary medicine or the degree of doctor of veterinary surgery. Some veterinarians are graduates of schools or colleges which confer the degree of veterinary surgeon.

Therefore, it is a gross injustice, which savors strongly of quackery and fraud, to appropriate or assume and use a professional title which one has no more right to than a maniac or a wild Indian.

It is apparent that some members of reputable veterinary medical associations have utterly disregarded and criminally violated the code of ethics and by-laws of their respective associations. In perusing the veterinary periodicals, and reputable veterinary text-books published in Great Britain, one observes and admires the honesty and modesty of our British colleagues in the legitimate use of professional titles. Is it any wonder (?) that British veterinarians are highly amused, and, perhaps, disgusted with the conduct of their professional brethren in America?

J. A. VAUGH, V.S.,

Vet. Surg. 6th Cavalry, U.S.A.

VETERINARIAN WANTED.

HAMDEN, N. Y., Oct. 18, 1884.

DEAR SIR.—I take the liberty of writing you concerning a veterinary surgeon. This entire neighborhood is sadly in need of one. The nearest men here to attend to calls in that line is a gentleman (licensed), and another who is not. They live eight miles from here. Those men are constantly on the go, and are called off as far as thirty miles, to my certain knowledge.

I have endeavored to persuade some of our young men to go to your place and go through, and I think two will leave here for your college this winter.

Last Sunday night a farmer had several cows affected by a singular complaint, and I ordered one of the stomachs brought to me. Upon examination I found paris green; he has lost four

cows since last Sunday night, and two more look as if they would go too. I am called upon very frequently myself, but knowing that I am not fully competent, am compelled to do what I can, and that is very little. I am a druggist doing business here, and am considered an expert in chemistry, and for that reason am supposed to know more than what I really do. While I cannot guarantee a man just so much business every year, I *will* say, there is an opening here that I do not think exists anywhere else. This is a large farming and dairy country, and the farmers are all well to do, and will pay well and cash. The quicker one will come here the better for all parties concerned. Hamden is a village on the Delhi Branch of the N. Y., O. & W. R. R. If you should know of any one who would like to come, and would like to correspond or come and see himself, I will give him full particulars, and the entire community will be gratified.

Yours truly,

A. ROSENMILLER,
Druggist, Hamden, N. Y.

NOTICE.

The Secretary of the Alumni Association of the American Veterinary College desires the present address of every member of the Association and any information of their work that will add to the history of the Association.

W. HORACE HOSKINS, *Secretary*.

254 South 15th street, Philadelphia, Pa.

NEWS AND SUNDRIES.

Hog cholera has presented itself in the southern districts of Philadelphia, and is causing some very heavy losses. In many cases the symptoms exhibited by the skin are of a most marked type. It also prevails in several other parts of Pennsylvania.

FOREI
kur
Clim
Vet
Jou
ical
HOME.
Tim
Nat
Pra
JOURN
Spi
Our
lica
BOOKS
Win
Pré
Che
grot
d'A
COMMU
Grit
Secr

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Repertorium der Thierheilkunde, Schweizer Archiv für Thierheilkunde, Tidskrift för Veterinärer, Revue für Thierheilkunde und Thierzucht, Clinica Veterinaria, Veterinarian, Veterinary Journal, Recueil de Médecine Veterinaire, Archives Veterinaria, Presse Veterinaire, Echo Veterinaire, Journal de Zootechnie, Revue d'Hygiène, Revue Scientifique, Gazette Médicale.

HOME.—Journal of Comparative Medicine, Medical Record, Spirit of the Times, Turf, Field and Farm, Country Gentleman, American Agriculturist, National Live Stock Journal, Breeders' Gazette, Science, Scientific American, Prairie Farmer, etc., etc.

JOURNALS.—Polyclinic, Home Farmer, Western Rural, Practical Farmer, Spirit of the Farm, Maine Farmer, Medical Herald, Kentucky Stock Farmer, Our Country Home, Sporting Life, Racine Daily Times, Missouri Republican, St. Louis Globe-Democrat, Chicago Express, etc., etc.

BOOKS AND PAMPHLETS.—Report of the Department of Agriculture of Winnipeg, Manitoba; Report of the Kansas State Board of Agriculture; Précis de Police Sanitaire par Peuch; Anleitung zur Mikroskopischen und Chemischen Diagnostik der Krankheiten der Haustiere von Dr. O. Siedamgrotzky und Dr. V. Holmeister; Praies Verbal de la Société Veterinaire d'Alsace-Lorraine; Srijks Veeartsenijschool te Utrecht.

COMMUNICATIONS.—J. D. Hopkins, R. S. Huidekoper, F. Ryder, W. Gribble, H. W. Hoskins, C. B. Michener, J. F. Winchester, W. Wilson, Secretary, W. Pendry, W. R. Howe, F. H. Parsons, D. Dixon, J. Myers, Sr.

Works by Prof. A. Liantard, M.D., V.S., H.F.R.C.V.S.

Professor of Anatomy and Operative Surgery to the American Veterinary College.

THE VADE MECUM OF EQUINE ANATOMY,

For the use of Advanced Students and Veterinarians.

PRICE, \$1.75, POSTPAID.

HYDROPHOBIA :

MEANS OF AVOIDING ITS PERILS AND PREVENTING ITS SPREAD.

By H. BOULEY, (translated).

Price 75 Cents.

Chart of the Age of the Domestic Animals, HORSES, CATTLE, SHEEP, DOGS AND PIGS.

From the excellent works of European authorities, illustrated by handsome photo-engravings.

TRANSLATION OF

ZUNDEL ON THE HORSE'S FOOT.

Price, \$1.50.

ANIMAL CASTRATION.

The only work on the subject in the English language.

Illustrated with nearly fifty Engravings.

12mo, Cloth, \$2.00.

The book is divided into several chapters, treating of all the various methods of castration of the horse, cattle, sheep, pigs and fowls, including the operation on cryptorchides, and of the accidents and complications arising as secondary to the operation.